

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 93-008

WASTE DISCHARGE REQUIREMENTS FOR:

TIDEWATER SAND AND GRAVEL COMPANY

CENTRAL BAY AND SUISUN BAY

The California Regional Water Quality Control Board, San Francisco Bay Region, finds that:

1. Tidewater Sand and Gravel Company, hereinafter the Discharger, conducts sand mining operations at various locations in the San Francisco Bay estuary.
2. Sand mining, reclamation, is the intentional dredging of sand for eventual reuse at an upland location.
3. Sand mining is currently carried out for the express purpose of gathering sand for use and sale for commercial purposes.
4. Sand mining is regulated by the U.S. Corps of Engineers (Corps) under Section 10 of the Rivers and Harbors Act and as such Section 401 of the Clean Water Act is applicable. The Discharger must also obtain permits issued by the San Francisco Bay Conservation and Development Commission (BCDC) If applicable the Discharger must enter into a lease with the State Land Commission for mineral extraction on state sovereign lands.
5. Sand is dredged from various shoals in the Estuary and is transported to upland facilities ("yards") for processing and storage.
6. The Discharger has obtained Waste Discharge Requirements for upland operations at three upland sand processing yards: San Francisco-Islais Creek, Oakland-Inner Harbor and Martinez. The Requirements at the San Francisco and Oakland yards became inactive after the Discharger changed the sand treatment process.
7. Waste Discharge Requirements were issued to Moe Sand and Gravel in 1971 which regulated the operation of the dredge as well as upland facilities (71-15).

Moe Sand and Gravel was acquired by Tidewater Sand and Gravel Company.

8. The Discharger has applied for a federal permit which will allow sand mining from the Bay on a daily basis at the following locations:

Point Knox Shoal, Alcatraz Shoal and Presidio Shoal (Central Bay)

Middle Ground Shoal (Suisun Bay)

9. The Discharger conducted a study of turbidity caused by their dredging at Point Knox shoal, entitled Report on Sand Mining in San Francisco Bay, November 1990.
10. In 1991, the Discharger conducted a study of sand mining impacts on Central Bay biological resources. Organisms most likely impacted by sand mining are certain benthic invertebrates that occur in sand shoals. Due to its high market value, Dungeness crab was the focus of the study, entitled Dungeness Crabs (Cancer Magister) and Sand Mining Operations in the Central San Francisco Bay
11. A review by state and federal regulatory and resources agencies found the studies to be deficient and have requested additional studies (or information) be submitted.
12. Deficiencies in past studies and the need for data on industry practices are addressed by this Order and attached Self-Monitoring Program.
13. These Requirements are intended to address the routine discharge of effluent caused by the sand mining operation and the impact of dredge operations on Bay water quality and associated beneficial uses.
14. The effluent, also known as "return-flow", "decant water" or "overflow" is known to contain high concentrations of fine-grain material and suspended particulate matter, including: silt and clay particles and detritus.
15. The effluent may cause a visible plume (turbidity) when Bay waters are relatively unperturbed by natural conditions (e.g. slack and flood tide).
16. The Waste Discharge Requirements, Order No. 71-15, issued on February 25, 1971, to Tidewater Sand and Gravel Company and as amended by Revised Waste Discharge Requirements, Order No. 76-65, are not in conformance with

the plans and policies of the Regional Board.

17. The beneficial uses of the Central Bay and the Suisun Bay are:
 - a. Water contact recreation.
 - b. Non-contact water recreation
 - c. Wildlife habitat
 - d. Preservation of rare and endangered species
 - e. Fish migration and spawning
 - f. Navigation
 - g. Estuarine Habitat
 - h. Industrial Service Supply
18. The Board, on December 16, 1992, adopted a revised Water Quality Control Plan (Basin Plan) which contains water quality objectives for the Central and Suisun Bay. The requirements of this document are consistent with that Plan.
19. For each shoal area, either the State Lands Commission acts as lead agency and prepares a Negative Declaration (CEQA) for each sand mining lease, or the Bay Conservation and Development Commission issues a permit which is "functionally equivalent".
20. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for this discharge.
21. The Board, in a public meeting, heard and considered all the comments pertaining to the discharge.
22. IT IS HEREBY ORDERED that the Discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:
 - A. Discharge Prohibitions
 1. The discharge shall not cause degradation of any water supply.
 2. The discharge shall not cause a nuisance as defined in Section 13050(m) of the California Water Code.
 - B. Conditions
 1. The Discharger shall not operate outside the bounds of the

permitted area Dredging in areas other than those described by this permit is prohibited.

2. The Discharger shall not operate in areas of Middle Ground Shoal which are less than ten feet depth, mean lower low water.
3. The Discharger shall not conduct operations on weekends or recognized holiday periods.

B. Specifications

1. Location:

The Discharger shall operate sand mining dredges only within the following areas as shown on current National Oceanic and Atmospheric Administration (NOAA) charts.

Central Bay
Point Knox Shoal
Alcatraz Shoal
Presidio Shoal

Suisun Bay

Middle Ground Shoal

2. Waste Minimization:

The Dredge and/or barge shall be operated in such a way as to minimize dredging of non-marketable sediments and the discharge of floating, suspended or deposited macroscopic particulate matter or foam fine-grain material, detritus and any foreign matter.

C. Receiving Water Limitations

1. The dredging and/or disposal of waste (i.e., sediments) shall not cause waters of the State to exceed the following quality limits downstream of the zone of initial discharge:

Dissolved Oxygen	5.0 mg/l minimum (when natural factors cause lesser concentrations, then this discharge shall not cause further
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reduction in the concentration of dissolved oxygen).

Dissolved Sulfide

0.1 mg/l maximum.

pH

A variation of natural ambient pH by more than 0.2 pH units.

Toxic or other deleterious substances

None shall be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

D. PROVISIONS

1. SPECIAL STUDIES

a. Effluent Assessment

Effluent discharged during the operation of the sand mining dredge/barge shall be characterized for toxic constituents in accordance with a plan approved by the Executive Officer. The assessment shall include the following elements and shall be in conformance with the requirements of the Self-Monitoring Program:

- (i.) measurement of the concentrations of priority pollutants in effluent and plume;
- (ii.) analysis of the physical characteristics of the effluent,;
- (iii.) measurement of the toxicity of the effluent;
- (iv.) representative of the daily effluent volume;
- (v.) samples taken from various depths within the plume.

b. Fisheries: Dungeness Crab and Bay Shrimp

A fisheries study shall be conducted to assess the impact of sand mining on shoal fisheries, with emphasis on dungeness crab (Cancer magister) and Bay shrimp (Cragon sp.). The study shall be carried out during the Spring and Summer of 1993. The study shall, at a minimum, include the following elements:

- i. Trawling of Pt. Knox and Presidio shoals for juvenile ("post-larvae") dungeness crab and Bay shrimp, and evidence of such animals (casts and body parts).
- ii. Estimates of density and abundance of juvenile crab and shrimp at the shoal locations.
- iii. Representative sampling of benthic area and sand volume.
- iv. Identification and discussion of other species found during trawls.
- v. The time-frame for data collection and trawling shall be consistent with known season highs for juvenile crab and shrimp in San Francisco Bay.
- vi. On-board entrainment monitoring shall be conducted in accordance with the Self-Monitoring Program.

c. Schedule:

The study shall be conducted according to the schedule described in Part B of the Self-Monitoring Program.

2. ROUTINE MONITORING AND REPORTING

The Discharger shall measure and record location, depth, tidal stage, and weather data on a daily basis. Effluent flow and sand load information shall also be recorded on a daily basis. Monitoring and reporting shall be conducted in accordance with the Self-Monitoring Program.

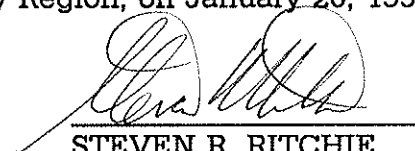
3. The discharger shall file with this Board a report of any material change or proposed change in the character, location, or quantity of the effluent discharge.

4. Dredging operations shall cease immediately whenever violations of requirements are detected through implementation of the Self-Monitoring Program (SMP) and operations shall not resume until alternative methods of compliance are provided. The discharger shall notify the Regional Board immediately whenever violations are detected and operations shall not resume until the Executive Officer of the Regional Board staff has approved the corrective action plan that will provide alternative methods of compliance.
5. The discharger shall file with the Regional Board quarterly self-monitoring reports performed according to any Self-Monitoring Program issued by the Executive Officer.
6. The discharge of effluent which meets the definition of a hazardous, or designated waste as defined in Title 23, Division 3, Chapter 15 of the California Administrative Code is prohibited. Only dredged material that has been demonstrated to be non-hazardous may be mined.
7. The discharger shall maintain a copy of this Order on the vessel so as to be available at all times to all vessel personnel.
8. The discharger shall maintain all devices or designed features installed in accordance with this Order such that they function without interruption for the life of the operation.
9. For the purposes of this Order, disposal of dredged material is defined as any ultimate use or disposition other than the resale of the sand for construction and other beneficial uses.
10. For dredged material which is not of market grade and is not sold, the ultimate off-site disposal of the material is subject to the approval of the Executive Officer. This approval shall be based upon a demonstration that the ultimate disposal will occur at a site which has Waste Discharge Requirements (WDR) from this Regional Board or a site that has received a waiver of WDR.
11. The Discharger shall permit the Regional Board or its authorized representative, upon presentation of identification:
 - a. Entry on to the premises on-board any and all vessels and into offices where records are kept.
 - b. Access to copy any records required to be kept under the

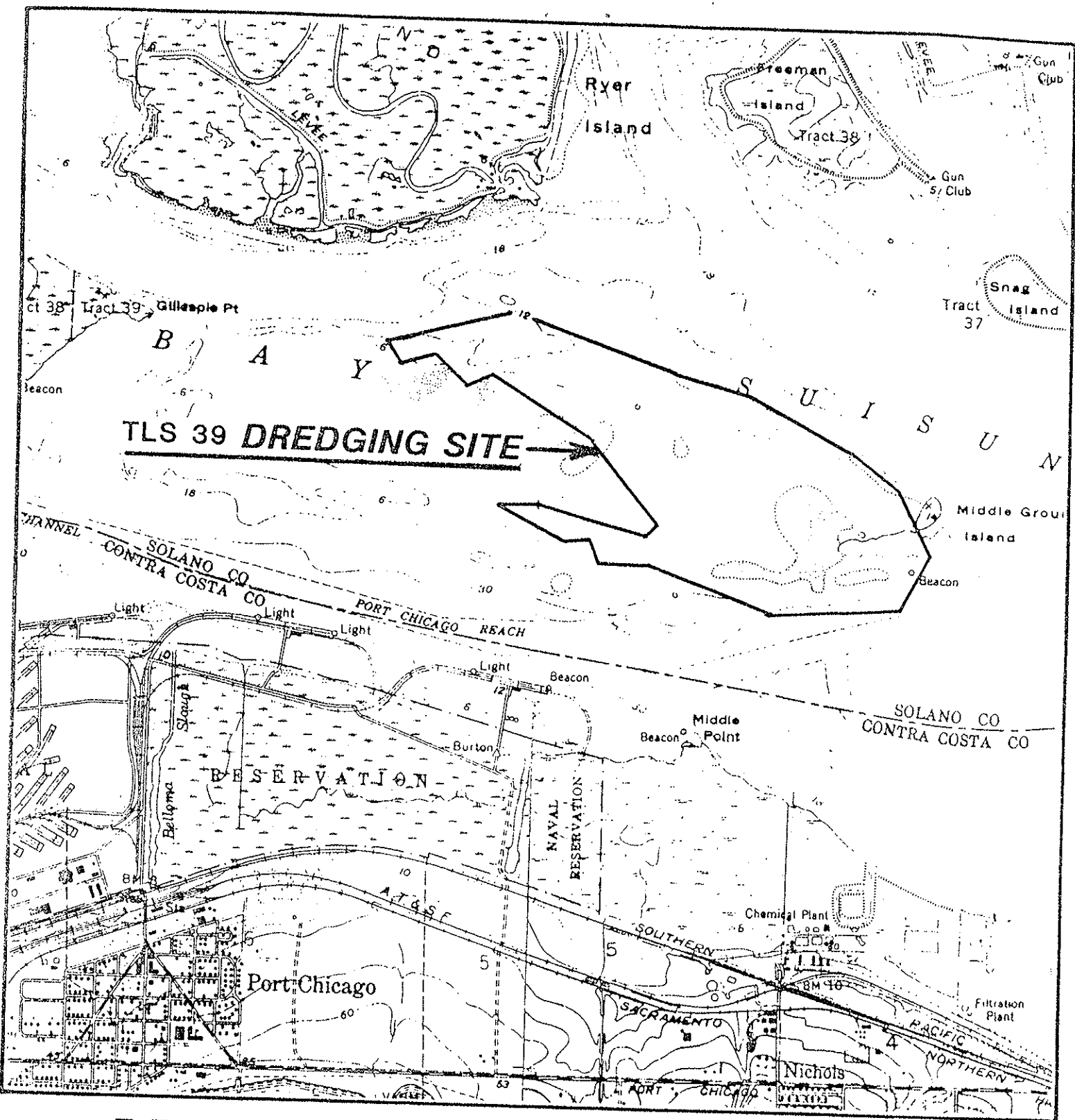
terms and conditions of this Order.

- c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this Order.
 - d. Sampling of any discharge or surface water covered by this Order.
12. This Order does not remove liability under federal, state or local laws, regulations or rules of other programs and agencies nor does this Order authorize the discharge of wastes without appropriate permits from other agencies or organizations.
13. This Order hereby rescinds Waste Discharge Requirements, Order No. 71-15, issued on February 25, 1971, and Revised Waste Discharge Requirements 76-65, issued on June 15, 1976. This Order is valid for a period of five years, hence expiring on January 20, 1998.
14. This Order is issued in place of Water Quality Certification issued by the State Water Resources Control Board (Section 401 of the Clean Water Act) pursuant to Section 3857 of the California Code of Regulations, Title 23.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, complete and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on January 20, 1993.


STEVEN R. RITCHIE
EXECUTIVE OFFICER

Attachments: A: Site Map-Central Bay
 B: Site Map-Suisun Bay
 C: Self Monitoring Program (SMP)



DREDGING SITE

PORT CHICAGO, CALIF. HONKER BAY, CALIF.

SE 1/4 CARQUINEZ STRAIT 15' QUADRANGLE

SW 1/4 PITTSBURG 15' QUADRANGLE

1000 0 1000 2000 3000 4000 FEET

PURPOSE: Provide commercial grade sand to market

DATUM: mllw

TIDEWATER SAND & GRAVEL

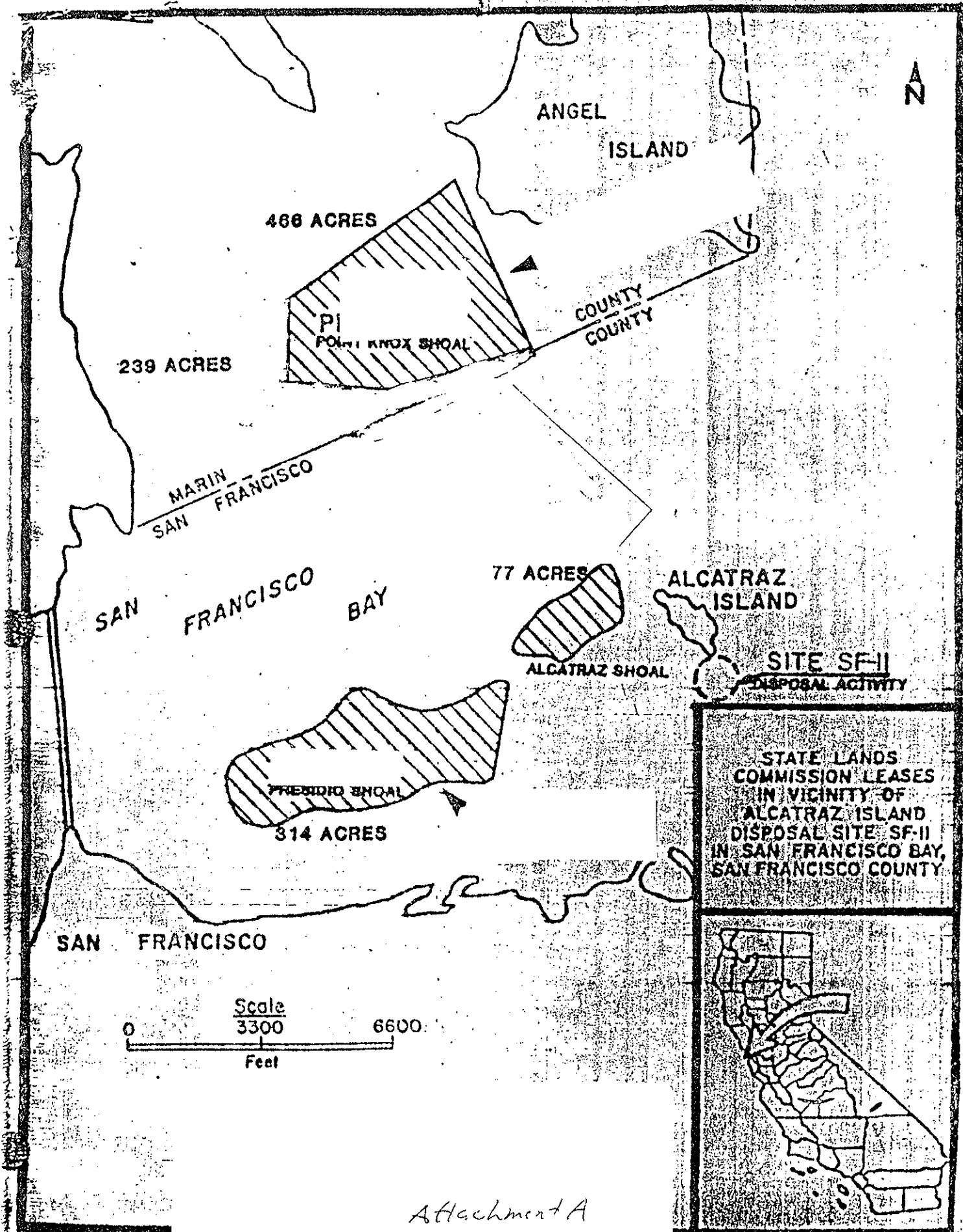
IN: Suisun Bay

AT: Martinez

COUNTY: Contra Costa

APPLICANT: Tidewater Sand & Gravel

Attachments + B.



CALIFORNIA REGIONAL WATER QUALITY CONTROL PLAN
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

WASTE DISCHARGE REQUIREMENTS

FOR:

TIDEWATER SAND AND GRAVEL
CENTRAL BAY AND SUISUN BAY LOCATIONS

PART A

I. GENERAL

A. Basis

Reporting responsibilities of waste discharges are specified in Sections 13225(a), 13267(b), 13268, 13383, 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16 and the Environmental Protection Agency's Discharge Monitoring Report (Form 3320-1).

B. Purpose

The principle purposes of a monitoring program by a waste Discharger, also referred to as a Self-Monitoring Program, are to 1) document compliance with waste discharge requirements and prohibitions established by this Regional Board, 2) to facilitate self-policing by the waste Discharger in the prevention and abatement of pollution arising from waste discharge, 3) to develop or assist in the development of effluent or other limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, and 4) to prepare water and waste water quality inventories.

C. Sampling and Analytical Methods

Sample collection, storage and analyses shall be performed according to 40 CFR, section 136, or other methods approved by the Executive Officer of this Regional Board.

Water and waste-water analyses shall be performed by a laboratory approved by the

Final WDR

Tidewater Sand and Gravel Co.

Department of Health Services (DHS) or a laboratory approved by the Executive Officer.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

Routine sampling shall follow Quality Assurance/ Quality Control procedures including the use of field (trip), equipment and laboratory blanks and laboratory surrogate samples.

All Quality Assurance/Quality Control measures and results shall be reported along with the data.

II. SPECIFICATIONS FOR SAMPLING AND ANALYSES

The Discharger is required to perform sampling and analyses as found in Part B of this SMP in accordance with the following conditions:

A. Effluent

1. Grab samples of effluent shall be collected during periods of maximum discharge.
2. Total ammonia nitrogen shall be analyzed and un-ionized ammonia calculated whenever bioassay test results fail to meet specified percent survival. All testing shall be conducted in accordance with ASTM protocol and shall include measurement and reporting of pH and temperature.

B. Receiving Waters

1. Receiving water sampling shall be conducted coincident with composite sampling of effluent.
2. Receiving water samples shall be collected at all stations within the shortest reasonable time period.

C. Sampling Records

1. Records shall include notes and observations for each sample as follows:

- a. Identity of each sampling and observation station by number.
 - b. Date and time of sampling.
 - c. Method of composite sampling.
 - d. Type of bioassay used.
 - e. Date and time analyses are started and completed and the name of person conducting analyses.
 - f. Complete procedure used, including method of preserving sample and identity and volumes or reagents used. A reference to a specific section of Standard Methods is satisfactory.
 - g. Calculations of results.
 - h. Results of analyses and/or observations.
2. A tabulation shall be maintained showing the effluent following flow data.
 - a. Total effluent flow or volume on a daily basis.
 - b. Total flow-through volume dredged on a daily basis.

IV. REPORTS TO BE FILED WITH THE REGIONAL BOARD

A. Report of Permit Violation

In the event that this permit is violated, the Discharger shall notify the Regional Board by telephone immediately and shall notify the Board in writing within seven working days. A written report shall include time and date of incident, duration and estimated volume of discharge or bypass. The report shall include a detailed discussion of the reasons for the non-compliance and what steps were or will be taken to correct the failure and prevent it from occurring again.

Additionally, the Discharger shall accelerate the monitoring program

immediately after the violation has been detected.

B. Self-Monitoring Reports

1. Written reports shall be filed regularly for each quarter (unless specified otherwise) and filed no later than the fifteenth of the following month. The reports shall be comprised of the following:
 - a. Transmittal Letter: to include identification of violations found during the reporting period, details and magnitude, frequency and dates of all violations, cause of the violations and a corrective actions taken or planned and the time schedule for completion.
 - b. Monitoring reports and the letter transmitting reports shall be assigned by a principal executive officer or ranking elected official of the Discharger, or by a duly authorized representative of that person.
 - c. The transmittal letter shall contain the following certification:

"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision and that the information submitted is, to the best of knowledge, is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."
2. By January 30 of each year, the Discharger shall submit an annual report to the Regional Board covering the activities of the previous year. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year. In addition the report shall contain a comprehensive discussion of the compliance record and the corrective actions taken place or planned which may be needed to bring the Discharger into full compliance with this permit.
3. Special studies shall be submitted to the Regional Board upon completion of the studies and in accordance with the schedule set forth in Part B. of this Self-Monitoring Program.

- C. The Self-monitoring program quarterly reports and studies shall be filed with the Regional Board as follows:

Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
Suite 500
2101 Webster Street
Oakland, CA 94612

CALIFORNIA REGIONAL WATER QUALITY CONTROL PLAN
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

WASTE DISCHARGE REQUIREMENTS

FOR:

TIDEWATER SAND AND GRAVEL COMPANY

PART B

I. DESCRIPTION OF SAMPLING PROGRAM FOR SPECIAL STUDY

The special study sampling program below requires the assessment of three aspects of the Dischargers operations: whole effluent quality, effluent plume quality and epibenthic resource impacts.

A. Effluent Quality Assessment

A study of the sand mining dredge and/or barge effluent shall be conducted so as to include the following elements.

1. Effluent shall be sampled directly once per month for three months. The results of the three-month study will be evaluated and this Self-Monitoring Program will be amended to reflect the outcome of the study.
2. Sampling shall coincide with the Receiving Water Assessment portion, Part B, below.
3. Sampling of the effluent shall be conducted at a point in the waste stream prior to discharge to the receiving water. A discrete sampling port fitted to the overflow pipe would be acceptable for this purpose.
4. Effluent samples shall be split so as to be analyzed both as a whole effluent and as a filtrate. Samples shall be filtered immediately after collection through a 0.45 micron-mesh filter and preserved according to

standard methods.

5. Samples shall be analyzed for the following constituents and parameters and using standard sample preservation methods:
 - a. total suspended solids
 - b. toxicity (approved bivalve larvae)
 - c. heavy metals
 - d. total sulfides
 - e. ammonia (including pH and temperature measurements)
 - f. total organic carbon
 - g. polynuclear hydrocarbons (PAH)

B. Receiving Waters Assessment

1. Water samples shall be taken on a monthly basis for three months within, and outside the effluent plume. The results of the three-month study will be evaluated and this Self-Monitoring Program will be amended to reflect the outcome of the study.
2. Samples shall be taken at the following locations:
 - a. within 30 meters downstream of the point of discharge;
 - b. at a point midpoint in the plume;
 - c. at a downstream/down current location outside the effluent plume;
 - d. at a point upstream/up current or along the side of the effluent plume and not under the influence of the discharge, but representative of ambient conditions.
3. Samples shall be taken at two depths: one meter below the water surface, and two meters above the bottom.
4. Samples shall be analyzed as whole effluent (no filtration) for the following parameters and using standard sample preservation methods:
 - a. total suspended solids

- b. heavy metals
 - c. total organic carbon
 - d. sulfides
 - e. ammonia (including pH and temperature measurements)
5. The following parameters shall be measured, as depth profiles at each sampling location. Measurements shall be taken at one meter intervals:
- a. oxygen
 - b. salinity/conductivity
 - c. temperature
 - d. pH

C. Fisheries: Dungeness Crab and Bay Shrimp

A fisheries study shall be conducted to assess the impact of sand mining on shoal fisheries, with emphasis on dungeness crab (Cancer magister) and Bay shrimp (Cragon sp.). The study shall be carried in accordance with the schedule set forth in Section III. below. The study shall, at a minimum, include the following elements:

- i. Trawling of Pt. Knox and Presidio shoals for juvenile ("post-larvae") dungeness crab and Bay shrimp, and evidence of such animals (casts and body parts).
- ii. Estimates of density and abundance of juvenile crab and shrimp at the shoal locations.
- iii. Representative sampling of benthic area and sand volume.
- iv. Identification and discussion of other species found during trawls.
- v. The time-frame for data collection and trawling shall be consistent with known season highs for juvenile crab and shrimp in San Francisco Bay.

II. SPECIAL STUDY SCHEDULE

The above study elements shall be implemented according to the following schedule.

March 1, 1993 Submit field sampling plan(s) to RWQCB, for approval by

the Executive Officer, and to the California Department of Fish and Game for approval by staff biologist.

April 1, 1993	Begin data collection
June 15, 1993	Conclude data collection
August 1, 1993	Submit draft report(s) to RWQCB and California Department of Fish and Game- Marine Resources Laboratory

III. DESCRIPTION OF ROUTINE MONITORING AND REPORTING PROGRAM

The following information shall be recorded by the discharger on the vessel(s) in operation on a daily basis. A summary of the information logged shall be submitted to the Board as part of the Quarterly and Annual Reports.

A. Standard Observations

1. Receiving Water

- a. Geographical location of vessel during dredging.
- b. Location of the dredge, reported as longitude and latitude.
- c. Duration of dredge operation.
- d. Number of loads obtained (trips made).
- e. Volume of material (wet) obtained.
- f. Hydrographic condition including: time and height of corrected low and high tides; and, depth of water column and sampling depth.
- g. Weather condition including: wind direction estimated velocity and precipitation.

2. Background Condition

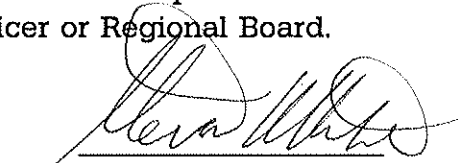
- a. Floating and suspended materials of waste origin (to include oil, grease, algae, and other macroscopic particulate matter): presence or absence, source and size of affected area.

3. On-board Entrainment Monitoring

- a. A periodic assessment of organisms entrained and found in the barge and/or effluent shall be conducted. The assessment shall be for all vertebrate and invertebrate organisms and shall be conducted by a qualified biologist. All organisms, both adult and juvenile shall be identified to the lowest possible taxonomic level, and condition shall also be recorded (i.e., live, dead or mutilated). Larval forms and castes shall also be noted and reported. The monitoring shall cover normal mining activities in the course of one work day at the subject shoal locations used by the Discharger and shall be conducted concurrently with the Special Study, Part I, above. The monitoring shall be conducted at a minimum of once every three months for one year. Results of the entrainment monitoring shall be included as part of the Dischargers quarterly and annual reports.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing Self-Monitoring Program has been developed in accordance with the procedures set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 93-008 and was adopted by the Board on January 20, 1993.

This Self-Monitoring Program may be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger, and revisions will be ordered by Executive Officer or Regional Board.



STEVEN R. RICHIE
EXECUTIVE OFFICER

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